



PGP020™ Series

Pumps and Motors

Catalog HY09-020/US



The Parker Hannifin Gear Pump Division Assures:

- Consistent quality
- Technical innovation
- Premier customer service

Worldwide Sales and Service

Parker operates sales and service centers in major industrial areas worldwide. Call 1-800-C-PARKER for more information, or for a synopsis of the Gear Pump Division, contact a Parker representative.

The Gear Pump Division's ability to engineer specialty products for unique applications has kept us at the forefront of technology, and ensured our position as the industry leader. Our success has come from providing a quality product with excellent sales and service support.

We manufacture hydraulic components for a wide range of industries including:

- Construction
- Refuse/dump truck
- Material handling
- Forestry
- Agriculture
- Industrial



WARNING

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

This document and other information from Parker Hannifin Corporation, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application and review the information concerning the product or system in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by Parker Hannifin Corporation and its subsidiaries at any time without notice.

Offer of Sale

The items described in this document are hereby offered for sale by Parker Hannifin Corporation, its subsidiaries or its authorized distributors. This offer and its acceptance are governed by the provisions stated in the "Offer of Sale".

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Big Performance In A Small Package

Parker Hannifin's PGP020 gear pumps and motors are an ideal power for the truck industry. With the 1/2" gears, it measures only 6" from mounting flange to the port end cover and weighs only 25 lbs.

The PGP020 can produce flows up to 29 gpm @ 2400 rpm up to 3000 psi; output to 39 gpm @ 2400 rpm up to 2500 psi. Motors and pumps can be bi-rotational.

A variety of drive shafts and mounting styles are offered to meet your needs. Standard features include rigid, one-piece drive shaft and gears and pressure-balanced thrust plated, which assure top efficiency. A rugged, high-strength, cast iron body provides durability.

Multiple Units

PGP020 pumps and motors can be assembled in tandem to provide additional pump flow or more motor torque from on the drive shaft. Each gear section is connected to the drive shaft by a connecting shaft. The strength of the shafts (their PL factor) determines the maximum gear width the pump or motor can turn at a given pressure.

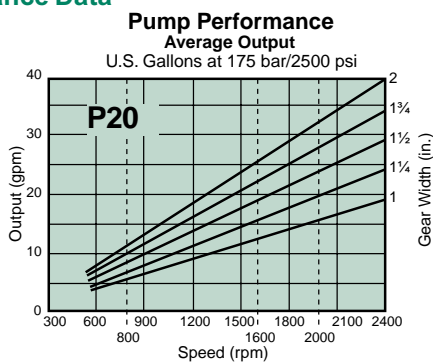
To determine the unit's PL, multiply the operating pressure (P) by the total gear width (L). Example: Assume a PGP020 pump will be operating at 3000 psi and have a 1 1/2" gear housing. Multiply the total gear width of 1 1/2" by the operating pressure.

$(1.5" \text{ gear width} \times 3000 \text{ psi}) = 4500$

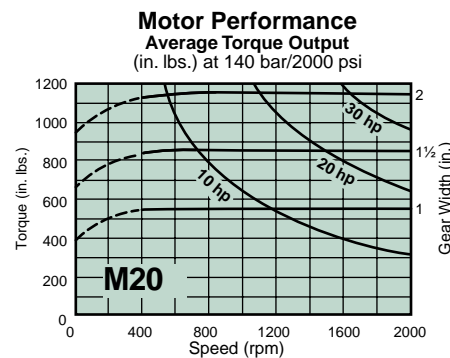
This pump needs a drive shaft with a PL factor of 4500 or more to operate successfully. The PL factor for each drive shaft is given on pages 10 and 11.

NOTE: In accordance with our policy of continuing product development, we reserve the right to change specifications shown in this catalog without notice.

Performance Data



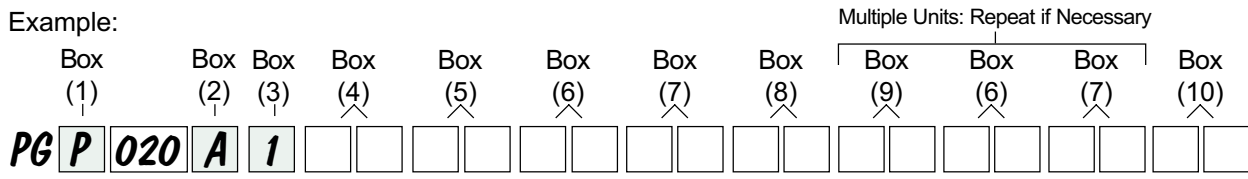
Pump Speed	Gear Width-Output (GPM)				
	1"	1 1/4"	1 1/2"	1 3/4"	2"
900	6.5	8.0	10.0	12.0	13.5
1200	9.0	11.5	14.0	16.0	18.5
1500	11.5	14.5	17.5	20.5	23.5
2100	16.5	21.0	25.0	29.5	34.0



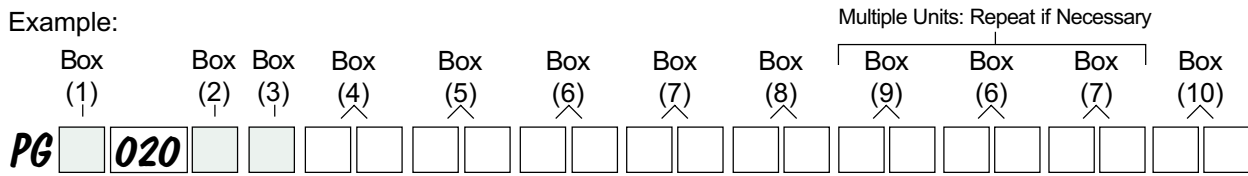
Motor Speed	Gear Width					
	1" Torque in lbs.	GPM	1 1/2" Torque in lbs.	GPM	2" Torque in lbs.	GPM
800	550	9.0	870	13.0	1150	17.0
1200	550	13.0	870	18.0	1150	23.5
1600	550	16.0	860	23.0	1140	30.5
2000	550	19.5	850	28.0	1125	37.0

PGP020™ How to Specify Code (Boxes 1-3)

Example:



Example:



Box 1 Description	
P	Pump
M	Motor

Box 2 Unit	
A	Single
B	Tandem

Box 3 Shaft End Cover	
ORDER CODE	ROTATION – OUTBEARING – DRAIN PORT
1	Clockwise (CW) rotation
2	Counter clockwise rotation (CCW); no outboard bearing
3	Double rotation; no outboard bearing
4	CW rotation with outboard bearing
5	CCW rotation with outboard bearing
6	Double rotation with outboard bearing
8	Double rotation with outboard bearing (motor) ¼" NPT drain
9	Double rotation ; no outboard bearing (motor) ¼" NPT drain

PGP020™ How to Specify (Box 4)

Example:

Multiple Units: Repeat if Necessary

Box (1)	Box (2)	Box (3)	Box (4)	Box (5)	Box (6)	Box (7)	Box (8)	Box (9)	Box (6)	Box (7)	Box (10)
PG	P	020	A	1	0	5					

Example:

Multiple Units: Repeat if Necessary

Box (1)	Box (2)	Box (3)	Box (4)	Box (5)	Box (6)	Box (7)	Box (8)	Box (9)	Box (6)	Box (7)	Box (10)
PG		020									

Box 4 Shaft End Cover Codes				Box 4 Shaft End Cover Codes			
ORDER CODE		PICTURE / MOUNTING FLANGE TYPE		ORDER CODE		PICTURE / MOUNTING FLANGE TYPE	
05				6 BOLT FLANGE – 3.25 DIA. BOLT CIRCLE			
10				2 BOLT PAD MOUNT			
27				4 BOLT CLOVERLEAF			
42				SAE 4 BOLT “B” ANSI 101-4			
46				SAE 2/4 BOLT “B” ANSI 101 – 2/4			
94				SAE 2 BOLT “A” ANSI 82-2			
96				SAE 2 BOLT “B” ANSI 101-2 TYPE II			
97				SAE 2 BOLT “B” ANSI 101-2			

PGP020™ How to Specify (Box 5)

Example:

Multiple Units: Repeat if Necessary

Box (1)	Box (2)	Box (3)	Box (4)	Box (5)	Box (6)	Box (7)	Box (8)	Box (9)	Box (6)	Box (7)	Box (10)
PG	P	020	A	1	0	5	C	E			

Example:

Multiple Units: Repeat if Necessary

Box (1)	Box (2)	Box (3)	Box (4)	Box (5)	Box (6)	Box (7)	Box (8)	Box (9)	Box (6)	Box (7)	Box (10)
PG		020									

Box 5 Port End Cover Codes						Box 5 Port End Cover Codes					
Order Codes		O.D.T. Porting				Order Codes		N.P.T. Porting			
Single Units W/O ST	W/ST	Tandem Units		Port Size		Single Units W/O ST	W/ST	Tandem Units		Port Size	
		W/O ST	W/ST	LEFT	RIGHT			W/O ST	W/ST	LEFT	RIGHT
CE	CY	CI	CY	¾	none	BE	BY	BI	BY	no port	no port
DE	DY	DI	DY	none	¾	KE	KY	KI	KY	¾	none
FE	FY	FI	FY	¾	¾	LE	LY	LI	LY	none	¾
GE	GY	GI	GY	1	¾	ME	MY	MI	MY	¾	¾
HE	HY	HI	HY	¾	1	QU	QQ	QD	QQ	1	1
JE	JY	JI	JY	1	1	AI		AI		¾	1
MA	YO	MU	YO	1	none	EI		EI		1	¾
RA	RO	SU	RO	none	1						

NOTE: W/O ST columns denote units without support studs, and W/ST columns denote units with support studs.

PGP020™ How to Specify N.P.T. Ports (Boxes 6 & 7)

(Only When Ordering N.P.T. Ports, See Pages 5-6 for O.D Tube Porting and Page 7 for Split Flange Porting)

Example:

Multiple Units: Repeat if Necessary

Box (1)	Box (2)	Box (3)	Box (4)	Box (5)	Box (6)	Box (7)	Box (8)	Box (9)	Box (6)	Box (7)	Box (10)												
PG	P	020	A	1	0	5	C	E	A	B	0	7											

Example:

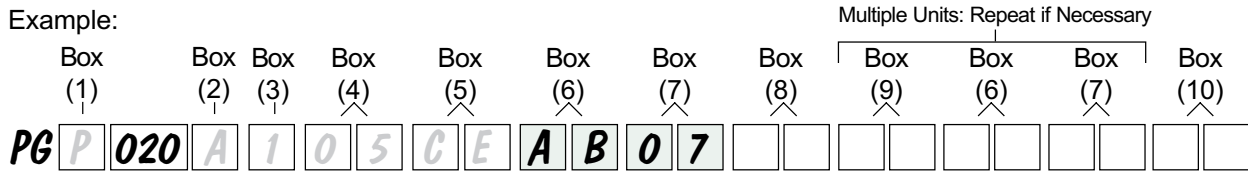
Multiple Units: Repeat if Necessary

Box (1)	Box (2)	Box (3)	Box (4)	Box (5)	Box (6)	Box (7)	Box (8)	Box (9)	Box (6)	Box (7)	Box (10)													
PG		020																						

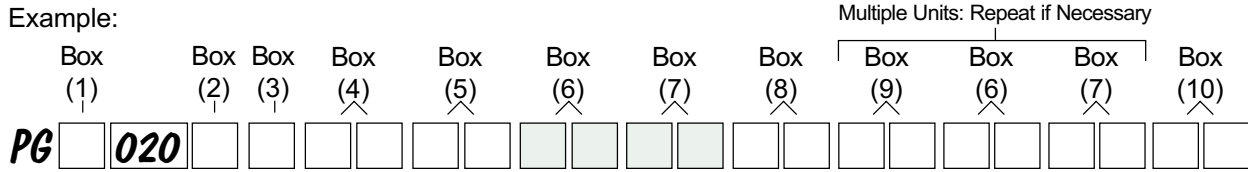
Box 6 Gear Housing - N.P.T. Ports ≤ 3000 psi			Box 7 Gear Housing - N.P.T. Ports ≤ 3000 psi							
ORDER CODE	N.P.T. PORTING PORT SIZE		GEAR WIDTH AVAILABILITY							
	LEFT	RIGHT	05	07	10	12	15	17	20	
AB	none	none	X	X	X	X	X	X	X	X
IL	½	none	X	X	X	-	-	-	-	-
IM	none	½	X	X	X	-	-	-	-	-
IR	½	½	X	X	-	-	-	-	-	-
IC	¾	none	-	X	X	X	X	X	X	X
ID	none	¾	-	X	X	X	X	X	X	X
IF	¾	¾	-	X	X	X	X	X	X	X
IG	¾	1	-	-	X	X	X	X	X	X
IH	¾	1 ¼	-	-	-	-	-	X	X	-
IJ	1	¾	-	-	X	X	X	X	X	X
IK	1 ¼	¾	-	-	-	-	-	X	X	-
YC	1	none	-	-	X	X	X	X	X	X
YD	none	1	-	-	X	X	X	X	X	X
YE	1	1	-	-	X	X	X	X	X	X
YG	1	1 ¼	-	-	-	-	X	X	X	X
YH	1	1 ½	-	-	-	-	-	-	-	-
YJ	1 ¼	1	-	-	-	-	-	X	X	X
YK	1 ½	1	-	-	-	-	-	-	-	-
IA	1 ¼	none	-	-	-	-	-	X	X	X
IB	none	1 ¼	-	-	-	-	-	X	X	X
YL	1 ¼	1 ¼	-	-	-	-	-	X	X	X

PGP020™ How to Specify Split Flange Porting (Boxes 6 & 7)

Example:



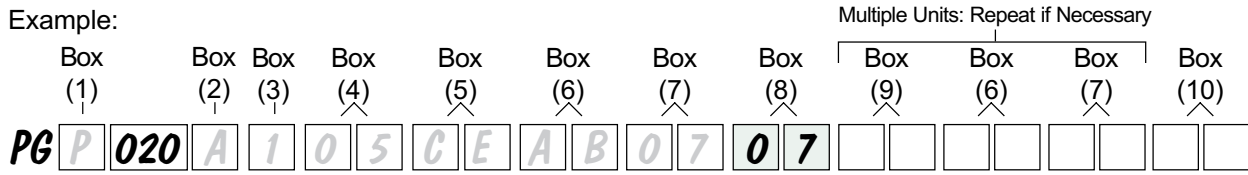
Example:



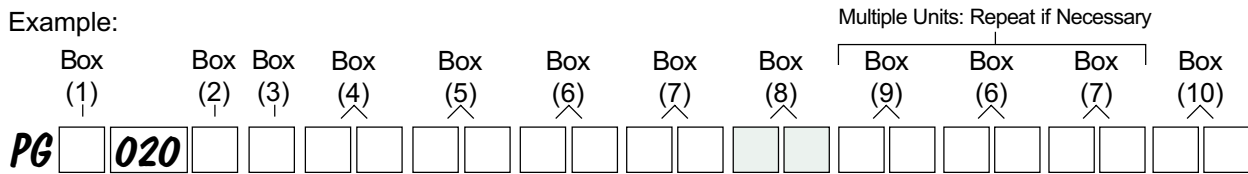
Box 6 Gear Housing - Split Flange Porting ≤3000 psi			Box 7 Gear Housing - Split Flange Porting ≤3000 psi						
ORDER CODE	SPLIT FLANGE PORTING PORT SIZE		GEAR WIDTH AVAILABILITY						
	LEFT	RIGHT	05	07	10	12	15	17	20
AB	none	none	X	X	X	X	X	X	X
UC	¾	none	-	X	X	X	X	X	X
UD	none	¾	-	X	X	X	X	X	X
UF	¾	¾	-	X	X	X	X	X	-
UG	¾	1	-	-	X	X	X	X	X
UH	¾	1 ¼	-	-	-	X	X	X	X
UJ	1	¾	-	-	X	X	X	X	X
UK	1 ¼	¾	-	-	-	X	X	X	X
OC	1	none	-	-	-	X	X	X	X
OD	none	1	-	-	-	X	X	X	X
OF	1	1	-	-	X	X	X	X	X
OG	1	1 ¼	-	-	-	X	X	X	X
OH	1	1 ½	-	-	-	-	-	X	X
OJ	1 ¼	1	-	-	-	X	X	X	X
OK	1 ½	1	-	-	-	-	-	X	X
OA	1 ¼	none	-	-	-	X	X	X	X
OB	none	1 ¼	-	-	-	X	X	X	X
OL	1 ¼	1 ¼	-	-	-	-	X	X	X
OM	1 ¼	1 ½	-	-	-	-	-	X	X
OP	1 ½	1 ¼	-	-	-	-	-	X	X
OE	1 ½	none	-	-	-	-	-	X	X
OU	none	1 ½	-	-	-	-	-	X	X

PGP020™ How to Specify (Box 8)

Example:



Example:

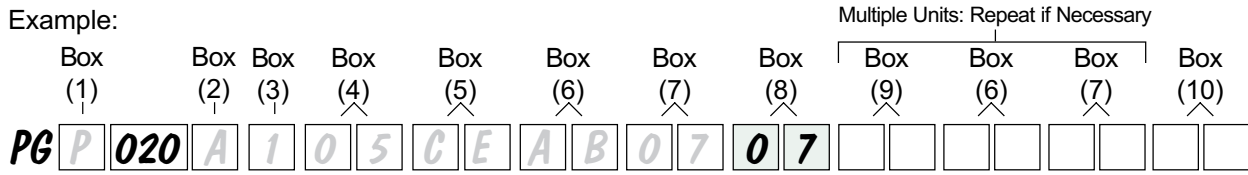


Box 8 Drive Shafts		Box 8 Drive Shafts	
ORDER CODE	PICTURE / MOUNTING FLANGE TYPE	ORDER CODE	PICTURE / MOUNTING FLANGE TYPE
07	<p>PL=5850</p> <p>S.A.E. "C" SPLINE/ANSI 32-4 (2 PIECE SHAFT,CONTINENTAL)</p>	30	<p>PL=4925</p> <p>S.A.E. "B" KEYED ANSI 22-1</p>
12	<p>PL=4150</p> <p>.750 DIA. KEYED SHAFT (.19 WIDE KEY) (2 PIECE SHAFT,CONTINENTAL)</p>	32	<p>PL=4630</p> <p>CLUTCH PUMP SHAFT</p>
15	<p>PL=4925</p> <p>S.A.E. "B" THREADED + KEY ANSI 22-2 (2 PIECE SHAFT,CONTINENTAL)</p>	43	<p>PL=7850</p> <p>S.A.E. "B-B" KEYED ANSI 25-1 MODIFIED</p>
25	<p>PL=8580</p> <p>S.A.E. "B" SPINE ANSI 22-4</p>	65	<p>PL=6035</p> <p>S.A.E. "B" SPLINE ANSI 22-4 TYPE II</p>

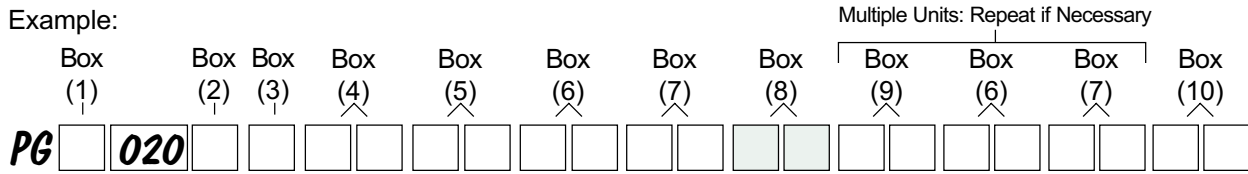
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PGP020™ How to Specify (Box 8)

Example:



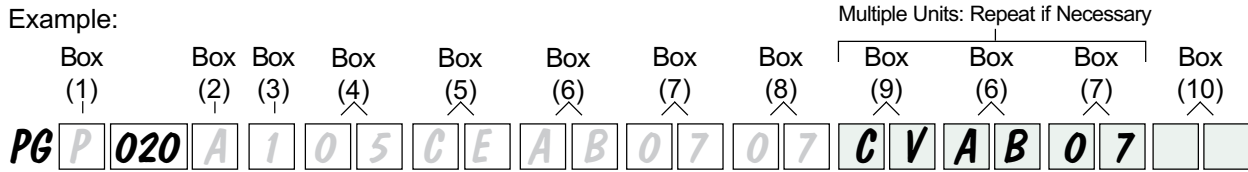
Example:



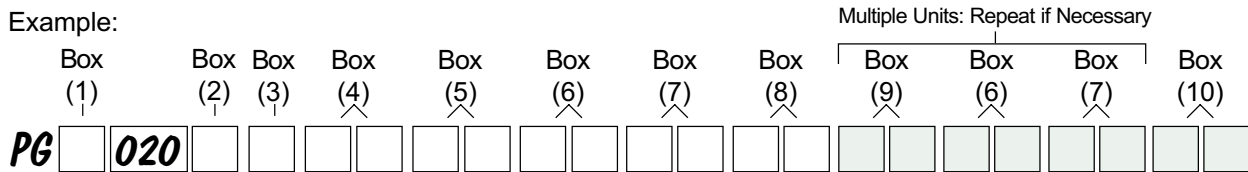
Box 8 Drive Shafts		Box 8 Drive Shafts	
ORDER CODE	PICTURE / MOUNTING FLANGE TYPE	ORDER CODE	PICTURE / MOUNTING FLANGE TYPE
66	<p style="text-align: right;">PL=4925</p> <p style="text-align: center;">S.A.E. "B" KEYED ANSI 22-1 TYPE II</p>	90	<p style="text-align: right;">PL=4925</p> <p style="text-align: center;">S.A.E. "B" THREADED + KEY ANSI 22-2 MODIFIED</p>
67	<p style="text-align: right;">PL=7850</p> <p style="text-align: center;">S.A.E. "B" KEYED ANSI 22-1 TYPE II</p>	95	<p style="text-align: right;">PL=2850</p> <p style="text-align: center;">S.A.E. "A" SPLINE ANSI 16-4</p>
68	<p style="text-align: right;">PL=12000</p> <p style="text-align: center;">1.00 DIA. 6 TOOTH SPLINE SHAFT</p>	98	<p style="text-align: right;">PL=13180</p> <p style="text-align: center;">S.A.E. "B-B" SPLINE ANSI 25-4</p>

PGP020™ How to Specify (Box 9)

Example:



Example:



Box 9 Bearing Carrier Codes- Flow Dividers									
ROTATION FLOWPATH CW-Clockwise CCW-Cnt. Clockwise	N.P.T. PORTING PORT SIZE			SPLIT FLANGE PORTING PORT SIZE			O.D.T. PORTING PORT SIZE		
	CODE	LEFT	RIGHT	CODE	LEFT	RIGHT	CODE	LEFT	RIGHT
CD SHT RF 20-H1 	C	none	none	LB	1	none	CB	1	none
	TB	1	none	-	-	-	DB	1 ¼	none
	VB	1 ¼	none	-	-	-	FB	1 ½	none
CD SHT RF 20-H2 	D	none	none	BL	none	1	BC	none	1
	BT	none	1	-	-	-	BD	none	1 ¼
	BV	none	1 ¼	-	-	-	BF	none	1 ½
CD SHT RF 20-H4 	TX	1	¾	LR	1	¾	CJ	1	¾
	VX	1 ¼	¾	BR	none	¾	DJ	1 ¼	¾
	VZ	1 ¼	1	-	-	-	DK	1 ¼	1
	-	-	-	-	-	-	FJ	1 ½	¾
	-	-	-	-	-	-	FK	1 ½	1
CD SHT RF 20-H5 	JT	¾	1	XL	¾	1	RC	¾	1
	JV	¾	1 ¼	-	-	-	RD	¾	1 ¼
	KV	1	1 ¼	-	-	-	RF	¾	1 ½
	-	-	-	-	-	-	SD	1	1 ¼
	-	-	-	-	-	-	SF	1	1 ½
CD SHT RF 20-H6 	TJ	1	¾	LX	1	CR	1	¾	
	VJ	1 ¼	¾	-	-	DR	1 ¼	¾	
	VK	1 ¼	1	-	-	-	DS	1 ¼	1
	-	-	-	-	-	-	FR	1 ½	¾
	-	-	-	-	-	-	FS	1 ½	1
CD SHT RF 20-H7 	XT	¾	1	RB	¾	none	JC	¾	1
	XV	¾	1 ¼	RL	¾	1	JD	¾	1 ¼
	ZV	1	1 ¼	-	-	-	JP	¾	none
	-	-	-	-	-	-	JF	¾	1 ½
	-	-	-	-	-	-	KD	1	1 ¼
CD SHT RF 20-H8 	ZX	1	¾	SR	1	¾	KJ	1	¾

PGP020™ How to Specify (Box 9) (Continued)

Example:

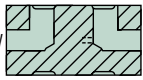
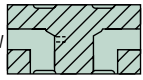
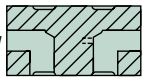
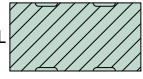
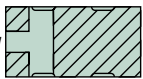
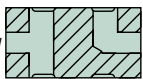
Multiple Units: Repeat if Necessary

Box (1)	Box (2)	Box (3)	Box (4)	Box (5)	Box (6)	Box (7)	Box (8)	Box (9)	Box (6)	Box (7)	Box (10)											
PG	P	020	A	1	0	5	C	E	A	B	0	7	0	7	C	V	A	B	0	7		

Example:

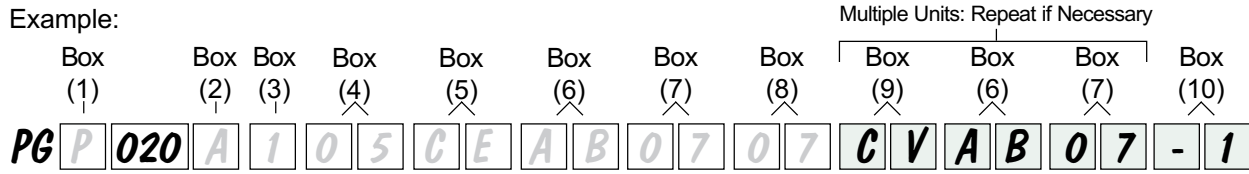
Multiple Units: Repeat if Necessary

Box (1)	Box (2)	Box (3)	Box (4)	Box (5)	Box (6)	Box (7)	Box (8)	Box (9)	Box (6)	Box (7)	Box (10)
PG		020									

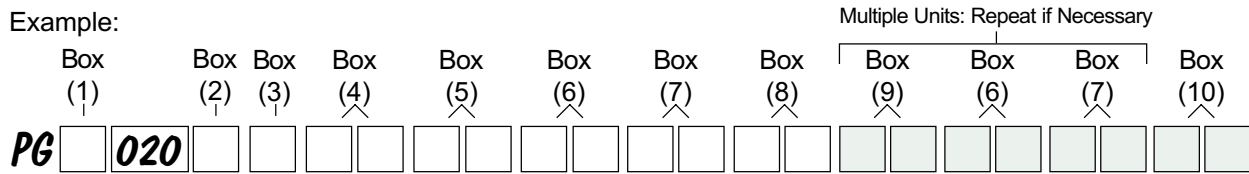
Box 9 Bearing Carrier Codes- Flow Dividers									
ROTATION FLOWPATH CW-Clockwise CCW-Cnt. Clockwise	N.P.T. PORTING PORT SIZE			SPLIT FLG. PORTING PORT SIZE			O.D.T. PORTING PORT SIZE		
	CODE	LEFT	RIGHT	CODE	LEFT	RIGHT	CODE	LEFT	RIGHT
CD SHT RF 20-H9  CCW	XZ	¾	1	RS	¾	1	JK	¾	1
CD SHT RF 20-H10  CW	ZS	1	¾	RZ	1	¾	KX	1	¾
CD SHT RF 20-H11  CCW	SZ	¾	1	ZR	¾	1	XK	¾	1
Bearing Carrier Codes- Motors									
CD SHT RF 20-H16  DBL	B	-	-	B	-	-	B	-	-
CD SHT RF 20-H21  CW	M	1	none	J	1	none	F	1	none
	N	1 ¼	none	-	-	-	G	1 ¼	none
	E	none	none	-	-	-	H	1 ½	none
CD SHT RF 20-H24  CW	BX	none	¾	GR	none	¾	GJ	none	¾
	GX	1	¾	HR	1	¾	HJ	1	¾
	HZ	1 ¼	¾	MT	none	1	MJ	1 ¼	¾
	LZ	1 ¼	1	-	-	-	RJ	1 ½	¾
	KZ	none	1	-	-	-	PK	1 ¼	1
	-	-	-	-	-	-	RK	1 ½	1
-	-	-	-	-	-	BK	none	1	

PGP020™ How to Specify (Box 9) (Continued)
(See below for How to Specify Box 10)

Example:



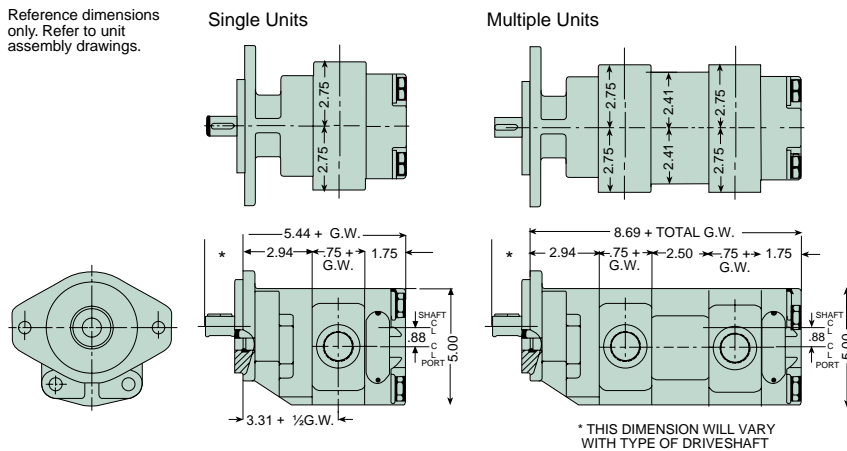
Example:



Box 9 Bearing Carrier Codes- Flow Dividers									
ROTATION FLOWPATH CW-Clockwise CCW-Cnt. Clockwise	N.P.T. PORTING PORT SIZE			SPLIT FLG. PORTING PORT SIZE			O.D.T. PORTING PORT SIZE		
	CODE	LEFT	RIGHT	CODE	LEFT	RIGHT	CODE	LEFT	RIGHT
	CD SHT RF 20-H26 	CV	none	3/4	FD	none	3/4	JH	none
CD SHT RF 20-H28 	GV	1	3/4	GD	1	3/4	PH	1	3/4
	MV	1 1/4	3/4	JG	none	1	RH	1 1/4	3/4
	TK	1 1/4	1	-	-	-	WH	1 1/2	3/4
	NK	none	1	-	-	-	QC	1 1/4	1
	-	-	-	-	-	-	VC	1 1/2	1
CD SHT RF 20-H29 	-	-	-	-	-	-	PC	none	1
	VG	1	3/4	WL	1	3/4	MC	1	3/4
	WG	1	3/4	ZL	1	3/4	SC	1	3/4

Dimensional Data (inches)

Reference dimensions only. Refer to unit assembly drawings.



PGP020™
How to Specify (Box 10)
(See above for example)

Box 10 Connecting Shaft

For connecting tandem units.
-1 Connecting Shaft - Multiple Units
PL=5850

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